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EXAMINER	
NGUYEN, HAI V	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/842,801	BARETZKI, LAURENT	
	Examiner	Art Unit	
	Hai V. Nguyen	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2006 and 01 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-26 and 28-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-26 and 28-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the communications received on 20 October 2006 and on 01 May 2006.

2. Claims 43-44 are new.

3. Claims 1-16, 27 are cancelled.

4. Claims 17-26 and 28-44 are presented for examination.

Response to Arguments

5. Applicant's arguments and amendments received on 20 October 2006 and 01 May 2006 have been fully considered but they are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new ground(s) of rejection as explained here below, necessitated by Applicant's substantial amendment (i.e., in claims 17, 39) to the claims which significantly affected the scope thereof.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 17-19, 21-26 and 28-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li** et al. US patent # **5,473,599** in view of **Tavallaei** et al. US patent # **6,105,146**.

8. As to claim 17, Li discloses a redundant routing system, comprising:

a first routing unit *(Fig. 2, R1)* configured to manage input and output data;

a second routing unit *(Fig. 2, R2 or R3 or R4)* configured to manage input and output data;

a network interface *(Fig. 2, network segment 118)* connecting said first and second routing units;

a standby bus interface *(Fig. 1, cable 120)* connecting said first and second routing units to each other;

However, Li does not explicitly disclose wherein, when said first routing unit is managing said input and output data, said second routing unit is configured to detect a failure of said first routing unit by monitoring both said network and standby bus interfaces using messages sent over both the network and the standby bus interface; wherein, when said second routing unit detects a failure of said first routing unit, said second routing unit is configured to deactivate said first routing unit so that said first routing unit no longer manages said input and output data and said second routing unit is further configured to start managing said input and output data; and wherein set of parameters for interpreting the messages, comprising configuration parameters of an application running on at least one of the first and second routing units, are stored in at least one configuration file included in both said first and second routing units.

In the same field of endeavor, Tavallaei discloses in Figures 4 and 6 that *"the PCI arbiter and monitor logic 225 monitors the operation of components residing on the PCI bus as the main PCI arbitration unit and generates an error logic if several accesses are made to a PCI component without a response (col. 20, lines 48-53). The PCI arbiter and monitor logic 225 preferably receives bus mastership requests and assigns or grants*

mastership of the PCI bus. If a bus master fails, the arbitrator and monitor logic deactivates the failed device (col. 23, line 59 – col. 24, line 8). If a suitable spare component has been provided in the system, the SMR in step 309 goes into the bus lock state by setting the SMC.sub.-- Bus.sub.-- Lock bit in the SMC. In response, the arbiter refuses to grant mastership to other PCI masters other than the SMC. The SMP also reconfigures the memory map, if necessary to associate the spare component with an address range. In step 311, the SMP copies the contents of the failed component to the spare device. After the copying is complete, the SMP then initializes the spare component, preferably by assigning an interrupt and an address range to the spare component. If the spare is given the address range of the failed component, the assignment of the address range may be delayed until after the failed component is disabled. In step 313 the failed device is disabled, and in step 315 the SMC.sub.-- Bus.sub.-- Lock bit is deasserted to permit the system to resume normal operations (col. 16, line 61 – col. 17, line 9)".

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Tavallaei's teachings of deactivating the failed device *(Figs. 4, 6; col. 16, line 61 – col. 17, line 9; col. 20, lines 48-53; col. 23, line 59 – col. 24, line 8; claims 8, 9)* with the teachings of Li, for the purpose of *enhancing system performance during normal operation (Tavallaei, col. 4, lines 35-37).*

9. As to claim 18, Li-Tavallaei discloses, wherein said first and second routing units have identical functions and include identical software and configuration files *(Li, Figs.*

1, 2, col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; Tavallaei, col. 23, line 58 – col. 24, line 8).

10. As to claim 19, Li-Tavallaei discloses, further comprising at least one serial link connecting said first and second routing units to at least one other system *(Li, Fig. 2b, one other group) (Li, Figs. 1, 2, col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40).*

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Li-Tavallaei** as applied to claims 17-19 above, and further in view of **Nguyen** US patent # **5,506,790**.

12. As to claim 20, Li-Tavallaei does not explicitly disclose, wherein said at least one serial link comprises at least one Y-split parallel cable.

In the same field of endeavor, Nguyen discloses the Y-Split cable *(Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40).*

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Nguyen's teachings of Split Y cable *(Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40)* with the teachings of Li-Tallavaei, for the purpose of *sharing communication data between the computer and the network device (Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40).*

13. As to claim 21, Li-Tavallaei-Nguyen discloses, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate itself to cease managing said input and output data and allow said second routing unit to start managing said input and output data *(Li, Fig. 1, the active router fails or resigns itself, then it sends the resign message, the new or standby router assume the active router)*

(Li, Fig. 5, box 190; col. 1, lines 24-31; col. 1, line 66 - col. 3, line 3; col. 3, line 23 – col. 4, line 45; col. 3, line 46 – col. 5, line 51).

14. Claims 22-26, 28-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li-Tavallaei-Nguyen** as applied to claims 17-21 above, and further in view of **Moore** US patent # **5,475,846**.

15. As to claim 22, Li-Tavallaei-Nguyen does not explicitly disclose, a change in an impedance of at least one input/output serial port.

In the same field of endeavor, Moore, discloses a change in an impedance of at least one input/output serial port *(Moore, claims 1, 5, 8, 9)*.

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Moore's teachings of change in I/O serial port *(Moore, claims 1, 5, 8, 9)* with the teachings of Li-Tavallaei-Nguyen, for the purpose of *sharing of interrupts between devices (Moore, Abstract, col. 3, lines 1-7).*

16. As to claim 23, Li-Tavallaei-Nguyen-Moore discloses, wherein the change in impedance imparts putting said at least one input/output serial port in a high impedance state *(Moore, Abstract; claims 1, 5, 8, 9)*.

17. As to claim 24, Li-Tavallaei-Nguyen-Moore discloses, wherein said second routing unit deactivates said first routing unit by sending a reset command to said first routing unit via the standby bus, said reset command executing a reset algorithm on said first routing unit *(Tavallaei, col. 20, line 48 – col. 21, line 49)*.

18. As to claim 25, Li-Tavallaei-Nguyen-Moore discloses, wherein polling messages are exchanged via said network and standby bus interfaces, said polling messages carrying information relevant to detecting said failure *(Li, Figs. 1, 2, 4, 5; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; Tavallaei, Figs. 4, 6, col. 16, line 42 – col. 17, line 38; col. 19, line 57 – col. 21, line 49).*

19. As to claim 26, Li-Tavallaei-Nguyen-Moore discloses, wherein said second routing unit detects said failure of said first routing unit when said polling messages are not properly responded to on at least one of said network and standby bus interfaces *(Li, Figs. 1, 2, 4, 5; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; Tavallaei, Figs. 4, 6, col. 16, line 42 – col. 17, line 38; col. 19, line 57 – col. 21, line 49).*

20. As to claim 28, Li-Tavallaei-Nguyen-Moore discloses, wherein, when launching an application on said first and second routing units, the set of parameters *(Li, preference values) (Tavallaei, bus lock bits)* appropriate to said application is loaded into a random access memory (RAM) *(Li, Figs. 1, 2, 4, 5; col. 1, lines 39-51; Tavallaei, Figs. 4, 6, col. 16, line 42 – col. 17, line 38; col. 19, line 57 – col. 21, line 49).*

21. As to claim 29, Li-Tavallaei-Nguyen-Moore discloses, wherein said network interface links said first and second routing units with at least one remote client system *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40).*

22. As to claim 30, Li-Tavallaei-Nguyen-Moore discloses, wherein said network interface is the Internet *(Li, Figs. 1, 2; WAN; col. 5, line 10 – col. 6, line 57).*

23. As to claim 31, Li-Tavallaei-Nguyen-Moore discloses, wherein said network interface is an Ethernet network *(Li, Figs. 1, 2; col. 5, line 10 – col. 6, line 57).*

24. As to claim 32, Li-Tavallaei-Nguyen-Moore discloses, wherein said network interface is a digital local area network (LAN) *(Li, Figs. 1, 2; LAN; col. 5, line 10 – col. 6, line 57).*

25. As to claim 33, Li-Tavallaei-Nguyen-Moore discloses, wherein said first and second routing units operate in Open Communication Processor (OCP) mode *(Li, Figs. 1, 2; LAN; col. 5, line 10 – col. 6, line 57).*

26. As to claim 34, Li-Tavallaei-Nguyen-Moore discloses, an alert protocol *(Li, a standby protocol)* to warn of a possible failure of the system *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67).*

27. As to claim 35, Li-Tavallaei-Nguyen-Moore discloses, wherein said first and second routing units are data routers *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67).*

28. As to claim 36, Li-Tavallaei-Nguyen-Moore discloses, wherein said first and second routing units are data servers *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67).*

29. As top claim 37, Li-Tavallaei-Nguyen-Moore discloses, wherein, after said second routing unit is activated and starts managing input and output data, said first routing unit is configured to detect a failure of said second routing unit *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67; Tavallaei, Figs. 4, 6, col. 16, line 42 – col. 17, line 38; col. 19, line 57 – col. 21, line 49).*

30. As to claim 38, Li-Tavallaei-Nguyen-Moore discloses, wherein, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate

itself to cease managing said input and output data and allow second routing unit to start managing said input and output data *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67; Tavallaei, Figs. 4, 6, col. 16, line 42 – col. 17, line 38; col. 19, line 57 – col. 21, line 49).*

31. Claim 39 is corresponding system in means plus function of claim 17; therefore, it is rejected under the same rationale as in claim 17.

32. Claims 40-42 have similar limitation of claims 19, 21, 25; therefore, they are rejected under the same rationale as in claims 19, 21, 25.

33. As to claim 43, Li-Tavallaei-Nguyen-Moore discloses, at least one transmission interval *(Li, period between hello messages)* between the messages, and at least one time limit between two messages *(Li, Figs. 1, 2; col. 1, lines 39-51; col. 2, line 15 – col. 3, line 40; col. 5, line 10 - col. 6, line 67).*

34. Claim 44 has similar limitations of claim 43; therefore, it is rejected under the same rationale as in claim 43.

Claim Rejections - 35 USC § 103

35. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

36. Claims 17-19, 21-26 and 28-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Coil** et al. US patent # **6,108,300** in view of **Tavallaei** et al. US patent # **6,105,146**.

37. As to claim 17, Coile discloses a redundant routing system, comprising:

a first routing unit *(Coile, Fig. 1, Primary or active 110; Fig. 2, Primary or active 210)* configured to manage input and output data;

a second routing unit *(Coile, Fig. 1, Secondary or Standby 110; Fig. 2, Secondary or Standby 210)* configured to manage input and output data;

a network interface *(Figs. 1, 2)* connecting said first and second routing units;

a standby bus interface *(Fig. 2, Failover cable 230)* connecting said first and second routing units to each other;

wherein, when said first routing unit is managing said input and output data, said second routing unit is configured to detect a failure of said first routing unit by monitoring both said network and standby bus interfaces using messages *(confirmation messages)* sent over both the network and the standby bus interface *(Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42)*;

However, Coile does not explicitly disclose wherein, said second routing unit is configured to deactivate said first routing unit so that said first routing unit no longer manages said input and output data and said second routing unit is further configured to start managing said input and output.

In the same field of endeavor, Tavallaei discloses in Figures 4 and 6 that *"the PCI arbiter and monitor logic 225 monitors the operation of components residing on the PCI bus as the main PCI arbitration unit and generates an error logic if several accesses are made to a PCI component without a response (col. 20, lines 48-53). The PCI arbiter and monitor logic 225 preferably receives bus mastership requests and assigns or grants mastership of the PCI bus. If a bus master fails, the arbitrator and monitor logic deactivates the failed device (col. 23, line 59 – col. 24, line 8). If a suitable spare component has been provided in the system, the SMR in step 309 goes into the bus lock state by setting the SMC.sub.-- Bus.sub.-- Lock bit in the SMC. In response, the arbiter refuses to grant mastership to other PCI masters other than the SMC. The SMP also reconfigures the memory map, if necessary to associate the spare component with an address range. In step 311, the SMP copies the contents of the failed component to the spare device. After the copying is complete, the SMP then initializes the spare component, preferably by assigning an interrupt and an address range to the spare component. If the spare is given the address range of the failed component, the assignment of the address range may be delayed until after the failed component is disabled. In step 313 the failed device is disabled, and in step 315 the SMC.sub.--*

Bus.sub.-- Lock bit is deasserted to permit the system to resume normal operations (col. 16, line 61 – col. 17, line 9)".

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Tavallaei's teachings of deactivating the failed device *(Figs. 4, 6; col. 16, line 61 – col. 17, line 9; col. 20, lines 48-53; col. 23, line 59 – col. 24, line 8; claims 8, 9)* with the teachings of Coile, for the purpose of *enhancing system performance during normal operation (Tavallaei, col. 4, lines 35-37).*

Coile-Tavallaei discloses wherein set of parameters *(Coile, Fig. 3, state flags 331-333)* for interpreting the messages, comprising configuration parameters of an application running on at least one of the first and second routing units, are stored in at least one configuration file included in both said first and second routing units *(Coile, Fig. 3, col. 6, line 43 – col. 7, line 35).*

38. As to claim 18, Coile-Tavallaei discloses, wherein said first and second routing units have identical functions and include identical software and configuration files *(Coile, Figs. 1, 2, 3).*

39. As to claim 19, Coile-Tavallaei discloses, further comprising at least one serial link connecting said first and second routing units to at least one other system *(Figs. 1, 2, client system).*

40. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Coile-Tavallaei** as applied to claims 17-19 above, and further in view of **Nguyen** US patent # **5,506,790**.

41. As to claim 20, Coile-Tavallaei does not explicitly disclose, wherein said at least one serial link comprises at least one Y-split parallel cable.

In the same field of endeavor, Nguyen discloses the Y-Split cable *(Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40)*.

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Nguyen's teachings of Split Y cable *(Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40)* with the teachings of Coile-Tallavaei, for the purpose of *sharing communication data between the computer and the network device (Nguyen, Fig. 1; col. 5, line 59 – col. 7, line 40)*.

42. As to claim 21, Coile-Tavallaei-Nguyen discloses, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate itself to cease managing said input and output data and allow said second routing unit to start managing said input and output data *(Coile, Fig. 5, box 560, col. 6, line 43 – col. 7, line 35; col. 9, line 56 – col. 10, line 50)*.

43. Claims 22-26, 28-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coile-Tallavaei-Nguyen as applied to claims 17-21 above, and further in view of **Moore** US patent # **5,475,846**.

44. As to claim 22, Coile-Tallavaei-Nguyen does not explicitly disclose, a change in an impedance of at least one input/output serial port.

In the same field of endeavor, Moore, discloses a change in an impedance of at least one input/output serial port *(Moore, claims 1, 5, 8, 9)*.

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Moore's teachings of change in I/O serial port *(Moore, claims 1, 5, 8, 9)* with the teachings of Coile-Tallavaei-Nguyen, for the purpose of *sharing of interrupts between devices (Moore, Abstract, col. 3, lines 1-7).*

45. As to claim 23, Coile-Tallavaei-Nguyen-Moore discloses, wherein the change in impedance imparts putting said at least one input/output serial port in a high impedance state *(Moore, Abstract; claims 1, 5, 8, 9).*

46. As to claim 24, Coile-Tallavaei-Nguyen-Moore discloses, wherein said second routing unit deactivates said first routing unit by sending a reset command to said first routing unit via the standby bus, said reset command executing a reset algorithm on said first routing unit *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

47. As to claim 25, Coile-Tallavaei-Nguyen-Moore discloses, wherein polling messages are exchanged via said network and standby bus interfaces, said polling messages carrying information relevant to detecting said failure *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

48. As to claim 26, Coile-Tallavaei-Nguyen-Moore discloses, wherein said second routing unit detects said failure of said first routing unit when said polling messages are not properly responded to on at least one of said network and standby bus interfaces

(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).

49. As to claim 28, Coile-Tallavaei-Nguyen-Moore discloses, wherein, when launching an application on said first and second routing units, the set of parameters appropriate to said application is loaded into a random access memory (RAM) *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

50. As to claim 29, Coile-Tallavaei-Nguyen-Moore discloses, wherein said network interface links said first and second routing units with at least one remote client system *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

51. As to claim 30, Coile-Tallavaei-Nguyen-Moore discloses, wherein said network interface is the Internet *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

52. As to claim 31, Coile-Nguyen-Moore discloses, wherein said network interface is an Ethernet network *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

53. As to claim 32, Coile-Tallavaei-Nguyen-Moore discloses, wherein said network interface is a digital local area network (LAN) *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

54. As to claim 33, Coile-Tallavaei-Nguyen-Moore discloses, wherein said first and second routing units operate in Open Communication Processor (OCP) mode *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35)*.

55. As to claim 34, Coile-Tallavaei-Nguyen-Moore discloses, an alert protocol to warn of a possible failure of the system *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35)*.

56. As to claim 35, Coile-Tallavaei-Nguyen-Moore discloses, wherein said first and second routing units are data routers *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35)*.

57. As to claim 36, Coile-Tallavaei-Nguyen-Moore discloses, wherein said first and second routing units are data servers *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35)*.

58. As top claim 37, Coile-Tallavaei-Nguyen-Moore discloses, wherein, after said second routing unit is activated and starts managing input and output data, said first routing unit is configured to detect a failure of said second routing unit *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35)*.

59. As to claim 38, Coile-Tallavaei-Nguyen-Moore discloses, wherein, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate itself to cease managing said input and output data and allow second routing unit to start managing said input and output data *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

60. Claim 39 is corresponding system in means plus function of claim 17; therefore, it is rejected under the same rationale as in claim 17.

61. Claims 40-42 have similar limitation of claims 19, 21, 25; therefore, they are rejected under the same rationale as in claims 19, 21, 25.

62. As to claim 43, Coile-Tallavaei-Nguyen-Moore discloses, wherein the at least one configuration file further includes the messages themselves, at least one transmission interval *(Coile, periodically sent messages)* between the messages, and at least one time limit between two messages *(Coile, Abstract, Figs. 1-3, col. 2, line 29 – col. 3, line 17; col. 3, line 66 – col. 4, line 16; col. 5, line 13 – col. 6, line 42; col. 6, line 43 – col. 7, line 35).*

63. Claim 44 has similar limitations of claim 43; therefore, it is rejected under the same rationale as in claim 43.

Claim Rejections - 35 USC § 102

64. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

65. Claims 17-21 and 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by **Cummings** et al. US patent # **6,240,087 B1**.

66. As to claim 17, Cummings teaches substantially the invention as claimed, including discloses a redundant routing system, comprising:

a first routing unit configured to manage input and output data *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*;

a second routing unit configured to manage input and output data *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*;

a network interface connecting said first and second routing units *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*;

a standby bus interface connecting said first and second routing units to each other *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*;

wherein, when said first routing unit is managing said input and output data, said second routing unit is configured to detect a failure of said first routing unit by monitoring both said network and standby bus interfaces using messages sent over both the network and the standby bus interface *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*;

wherein, said second routing unit is configured to deactivate said first routing unit so that said first routing unit no longer manages said input and output data and said second routing unit is further configured to start managing said input and output *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*; and

wherein set of parameters for interpreting the messages, comprising configuration parameters of an application running on at least one of the first and second routing units, are stored in at least one configuration file included in both said first and second routing units *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13).*

67. As to claim 18, Cummings discloses, wherein said first and second routing units have identical functions and include identical software and configuration files *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13).*

68. As to claim 19, Cummings discloses, further comprising at least one serial link connecting said first and second routing units to at least one other system *(Cummings,*

Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13).

69. As to claim 20, Cummings discloses, wherein said at least one serial link comprises at least one Y-split parallel cable *(Cummings, "split mode", Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13).*

70. As to claim 21, Cummings discloses, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate itself to cease managing said input and output data and allow said second routing unit to start managing said input and output data *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13).*

71. Claim 39 is corresponding system in means plus function of claim 17; therefore, it is rejected under the same rationale as in claim 17.

72. Claims 40-41 have similar limitation of claims 19, 21; therefore, they are rejected under the same rationale as in claims 19, 21.

Claim Rejections - 35 USC § 103

73. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

74. Claims 22-26, 28-38, 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Cummings** as applied to claims 17-21 above, and further in view of **Moore** US patent # **5,475,846**.

75. As to claim 22, Cummings does not explicitly disclose, a change in an impedance of at least one input/output serial port.

In the same field of endeavor, Moore, discloses a change in an impedance of at least one input/output serial port *(Moore, claims 1, 5, 8, 9)*.

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Moore's teachings of change in I/O serial port *(Moore, claims 1, 5, 8, 9)* with the teachings of Cummings, for the purpose of *sharing of interrupts between devices (Moore, Abstract, col. 3, lines 1-7).*

76. As to claim 23, Cummings-Moore discloses, wherein the change in impedance imparts putting said at least one input/output serial port in a high impedance state *(Moore, Abstract; claims 1, 5, 8, 9)*.

77. As to claim 24, Cummings-Moore discloses, wherein said second routing unit deactivates said first routing unit by sending a reset command to said first routing unit via the standby bus, said reset command executing a reset algorithm on said first routing unit *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

78. As to claim 25, Cummings-Moore discloses, wherein polling messages are exchanged via said network and standby bus interfaces, said polling messages carrying information relevant to detecting said failure *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

79. As to claim 26, Cummings-Moore discloses, wherein said second routing unit detects said failure of said first routing unit when said polling messages are not properly

responded to on at least one of said network and standby bus interfaces *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

80. As to claim 28, Cummings-Moore discloses, wherein, when launching an application on said first and second routing units, the set of parameters *(flags)* appropriate to said application is loaded into a random access memory (RAM) *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

81. As to claim 29, Cummings-Moore discloses, wherein said network interface links said first and second routing units with at least one remote client system *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

82. As to claim 30, Cummings-Moore discloses, wherein said network interface is the Internet *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

83. As to claim 31, Cummings-Moore discloses, wherein said network interface is an Ethernet network *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

84. As to claim 32, Cummings-Moore discloses, wherein said network interface is a digital local area network (LAN) *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

85. As to claim 33, Cummings-Moore discloses, wherein said first and second routing units operate in Open Communication Processor (OCP) mode *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

86. As to claim 34, Cummings-Moore discloses, an alert protocol *(Li, a standby protocol)* to warn of a possible failure of the system *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

87. As to claim 35, Cummings-Moore discloses, wherein said first and second routing units are data routers *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

88. As to claim 36, Cummings-Moore discloses, wherein said first and second routing units are data servers *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

89. As top claim 37, Cummings-Moore discloses, wherein, after said second routing unit is activated and starts managing input and output data, said first routing unit is configured to detect a failure of said second routing unit *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

90. As to claim 38, Cummings-Moore discloses, wherein, when said first routing unit detects a failure in itself, said first routing unit is configured to deactivate itself to cease managing said input and output data and allow second routing unit to start managing said input and output data *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

91. Claim 42 has similar limitation of claim 25; therefore, they are rejected under the same rationale as in claim 25.

92. As to claim 43, Cummings-Moore discloses, at least one transmission interval between the messages, and at least one time limit between two messages *(Cummings, Figs. 2, 13-15, 32-33, 37-38, col. 44, line 15 – col. 46, line 57; col. 48, line 19 – col. 50, line 13)*.

93. Claim 44 has similar limitations of claim 43; therefore, it is rejected under the same rationale as in claim 43.

94. Further references of interest are cited on Form PTO-892, which is an attachment to this action.

Conclusion

95. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai V. Nguyen whose telephone number is 571-272-3901. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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